

# **INTEGRATING ENVIRONMENTAL HEALTH EQUITY CONSIDERATIONS IN RISK BASED DECISION MAKING: CHALLENGES AND OPPORUNITIES**

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## **Background**

The United States (US) presidential Executive Order No. 12898 mandates each Federal agency to make achieving Environmental Justice (EJ) part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its actions on low-income populations and minority populations in the United States. A 2005 US Government Accounting Office report noted that implementation of the executive order was limited in the development of air regulations. This study investigates the opportunities and challenges of integrating equity in risk based decision-making within the context of rule-making.

## **Methods**

We developed an equity-focused risk-based decision-making framework, which includes the application of disproportionality functions to assess for social group disparities in environmental health (EH) outcomes. We subsequently demonstrated the application of the equity-focused framework to hypothetical regulatory analyses reflective of a sample of EPA regulations that are based on risk.

## **Results**

Our study demonstrates that equity can be integrated into risk-based rule-making. To assess for disparities in EH outcomes, a variety of approaches can be applied. The choice of method depends on the data characteristics and the framing of analytical questions. A notable limitation of the equity-focused framework is the constrained applicability of analytical results to the policy decision given the statutory constructs of some of EPA's regulations.

## **Conclusions**

The equity-focused decision-making framework allows for successful integration of equity in all steps of many risk-based EPA rule-making decisions. Continued collaborative efforts amongst risk assessors and managers are necessary to further advance the development of additional methods, to facilitate greater consideration of concepts such as cumulative risk disparities.